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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,558

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Abhijeet Gole

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EXAMINER

HUSSAIN, TAUQIR

ART UNIT

PAPER NUMBER

2452

MAIL DATE

DELIVERY MODE

09/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/622,558	GOLE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	TAUQIR HUSSAIN	2452	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-21, 28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-21 and 28-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/04/2009 has been entered.

### ***Response to Amendment***

2. Applicant has elected group II which includes claims 14-21 and 28-29 canceling claims 1-13, 22-27, 30 and 38.

3. This office action is in response to amendment /reconsideration filed on 05/13/2009, the amendment/reconsideration has been considered. Claims 14-21 and 28-29 are pending for examination, the rejection cited as stated below.

### ***Response to Arguments***

4. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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5. As to claim 29, the language of the claim raises a question whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical operation producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. In particular, the language of the claim directed to a program per se claim (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759, 1760).

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 14-19 and 25-38 are rejected under 35 U.S.C 103(a) as unpatentable over Slaughter, in view of Craddock et al. (pub. No.: US 2003/0061296 A1), hereinafter "Craddock".

8. As to claims 14 and 29, Slaughter discloses, creating, using a cluster connection manager executing on a first server, an initial connection with a cluster partner on a second server (Slaughter, Col.4, lines 29-36, where cluster server106 initializes with other nodes to setup an initial configuration);

exchanging a set of peer connection information (Slaughter, Col.4, lines 29-30, where node membership information includes the connection information);

passing a set of cluster connection manager client information to the cluster partner, wherein the set of cluster connection manager client information includes at least one virtual interface and any memory requirements for each cluster manager client

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(Slaughter, Col.4, lines 33-36, where database 112 initializes and stores the cluster membership, since server-106 is part of a cluster therefore it is virtually connected with all the nodes via connection module);

creating a set of appropriate communication ports using the set of cluster connection manager client information (Slaughter, Col.7, lines 55-60, where ports are incremented after every reconfiguration);

Slaughter however is silent on disclosing, alerting the cluster partner of a ready status or alerting a set of cluster connection manager clients that the cluster partner is in a ready state.

Craddock however discloses, alerting the cluster partner of a ready status (Craddock, [0060], Receive work queue 400 contains work queue elements (WQEs) 416-420, describing where to place incoming channel semantic data from the SAN fabric. A work queue element is processed by hardware 408 in the host channel adapter); and

alerting a set of cluster connection manager clients that the cluster partner is in a ready state (Craddock, [0061], The verbs also provide a mechanism for retrieving completed work from completion queue 404. As shown in FIG. 4, completion queue 404 contains completion queue elements (CQEs) 430-436. Completion queue elements contain information about previously completed work queue elements. Completion queue 404 is used to create a single point of completion notification for multiple queue pairs and therefore, completion queue is an indication that process has been completed and ready to accept more data for processing),

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wherein the virtual interface connection allows remote direct memory access (RDMA) operations that allow the cluster connection manager operating on the first server to directly access memory regions of the cluster partner operating on the second server( Craddock, [0063], A remote direct memory access (RDMA) read work request provides a memory semantic operation to read a virtually contiguous memory space on a remote node. A memory space can either be a portion of a memory region or portion of a memory window. A memory region references a previously registered set of virtually contiguous memory addresses defined by a virtual address and length. A memory window references a set of virtually contiguous memory addresses that have been bound to a previously registered region)

Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to combine the teachings of Sutherland as applied to claim 1-2 and 4 above with the teachings of Craddock in order to provide a system where mechanism for initiating and completing one or more I/O transactions using memory semantic messages. Memory semantic messages are transmitted by means of a remote direct memory access (RDMA) operation; they are more akin to a memory copy than the simple transmission of a message.

9. As to claim 28, carry similar limitations as claim 25 and therefore is rejected under for same rationale.

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10. As to claim 15, Slaughter and Craddock discloses the invention substantially as in parent claim 14 above, including, wherein the set of clients comprises a failover monitor process (Slaughter, Abstract, where concept of failover is incorporated).

11. As to claim 16, Slaughter and Craddock discloses the invention substantially as in parent claim 14 above, wherein the set of peer connection information comprises a version number (Slaughter, Col.5, lines 27-30, where version no is taken into consideration).

12. As to claim 17, Slaughter and Craddock discloses the invention substantially as in parent claim 14 above, collecting, from a set of clients, the set of client information (Slaughter, Col.3, lines 60-65, where in client information is collected in the database); and

transferring the collected set of client information to the cluster (Slaughter, Col.3, lines 60-65, where client information is transfer across the cluster).

13. As to claim 18, Slaughter and Craddock discloses the invention substantially as in parent claim 17 above, wherein the client information comprises a number of communication ports required (Slaughter, Col.3, lines 60-65, where client parameters can contain communication ports).

14. As to claim 19, Slaughter and Craddock discloses the invention substantially as in parent claim 17 above, wherein the set of client information further comprises an amount of memory requested by a particular client (Slaughter, Abstract where

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distributed processing system it is known fact to allocate the memory demanded by client or assigned by the server or management software).

As to claim 20, Slaughter and Craddock discloses the invention substantially as in parent claim 14 above, including, wherein the step of creating an initial connection further comprises the step of using remote direct memory access primitives to create the initial connection (Craddock, Abstract, lines 1-6 and [0033, lines 1-3, where message contains primitive).

15. As to claim 21, Slaughter and Craddock discloses the invention substantially as in parent claim 14 above, including, wherein creating an initial connection further comprises the step of performing a series of remote direct memory access operations to create the initial connection (Craddock, [0064, lines 1-7], read operation is performed by RDMA and [0065, lines 1-3], where write operation is performed by RDMA therefore, read and write are series of operations performed by RDMA).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAUQIR HUSSAIN whose telephone number is (571)270-1247. The examiner can normally be reached on 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571 272 3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. H./  
Examiner, Art Unit 2452

/Dohm Chankong/  
Primary Examiner, Art Unit 2452